

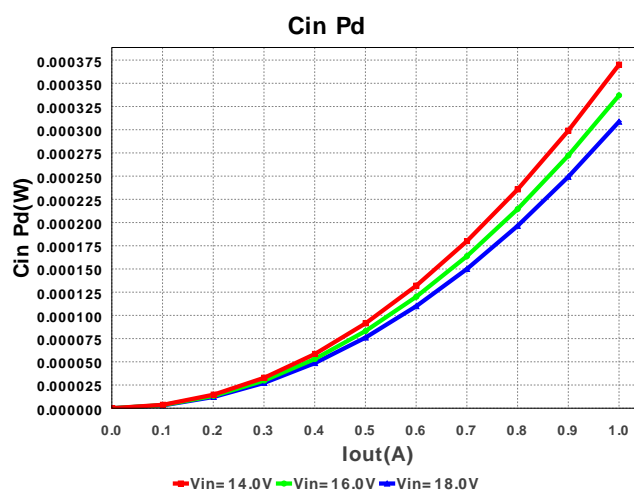
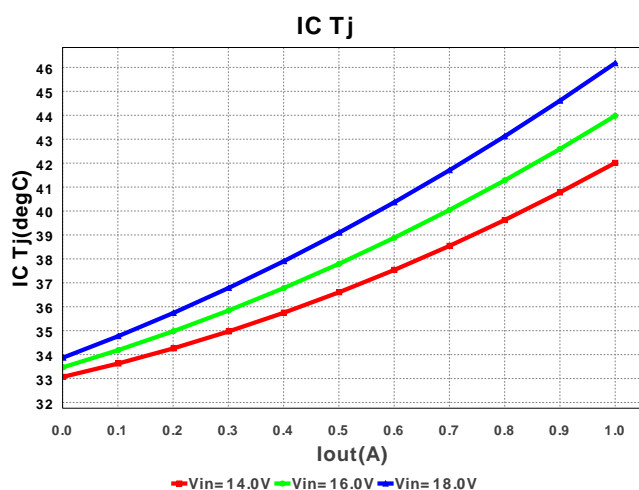
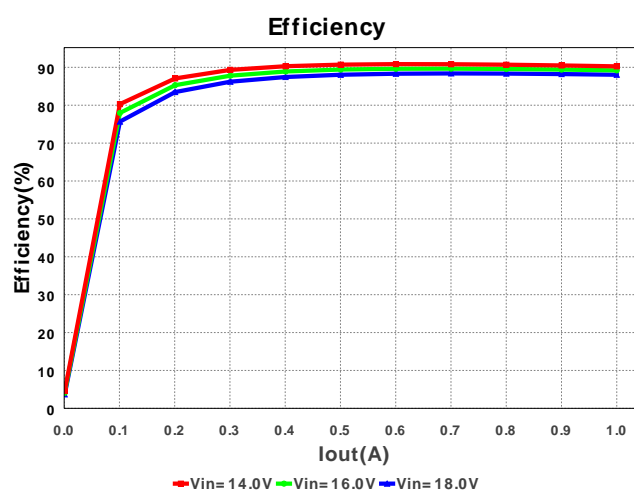
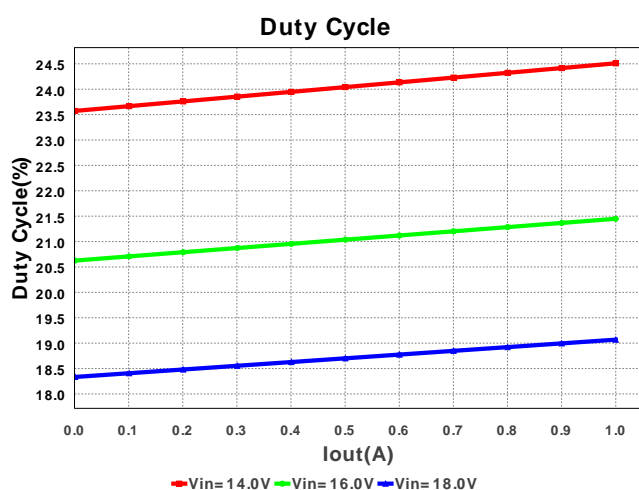
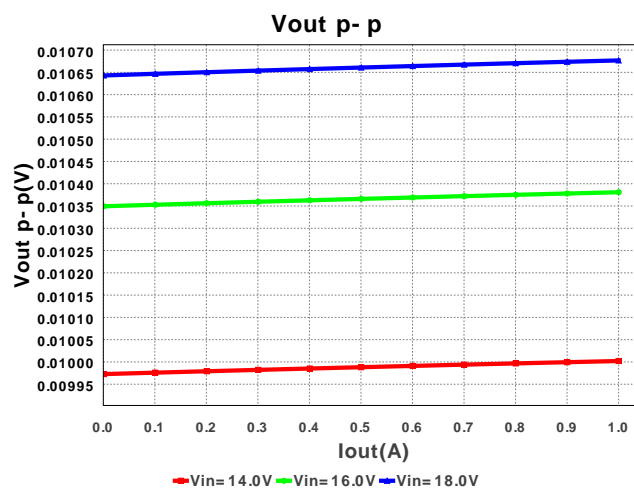
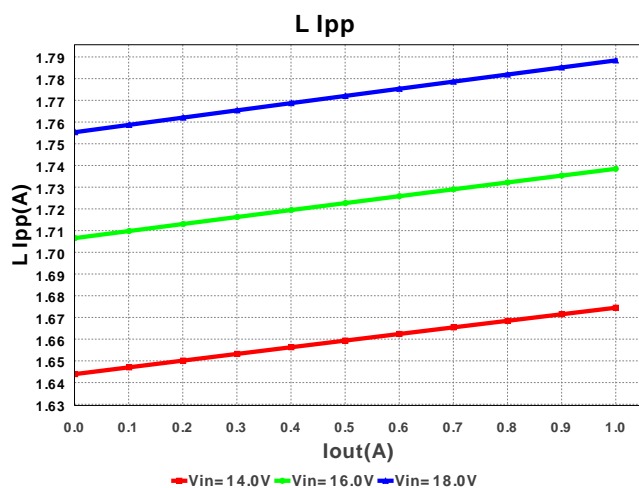
### 电气材料清单

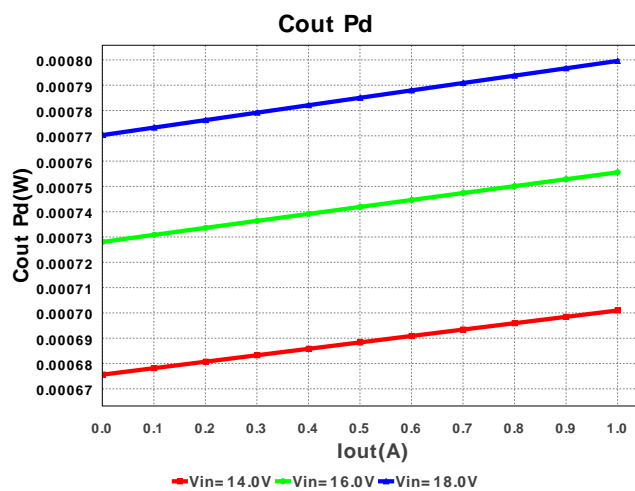
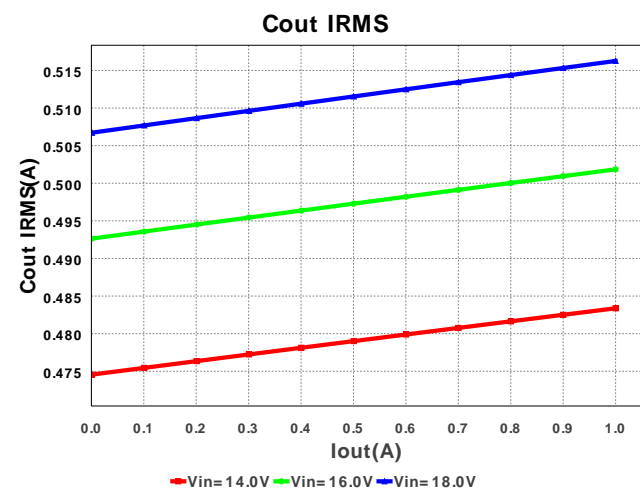
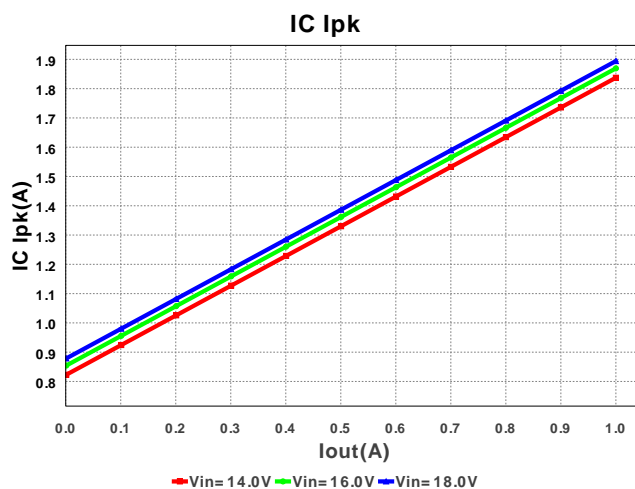
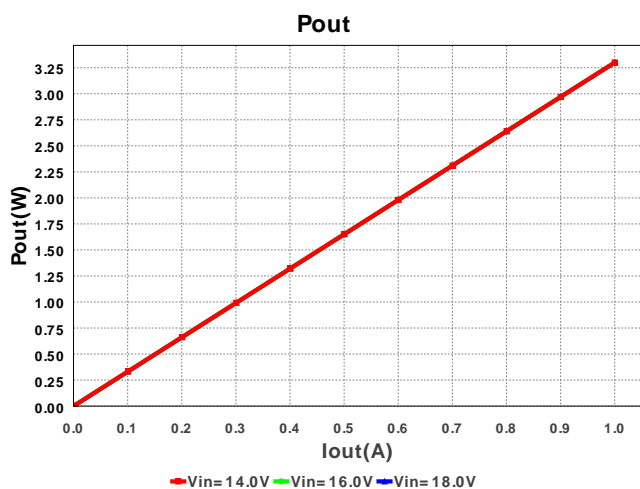
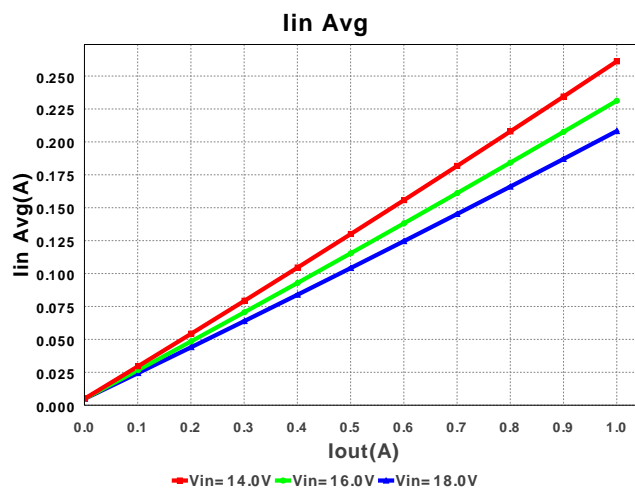
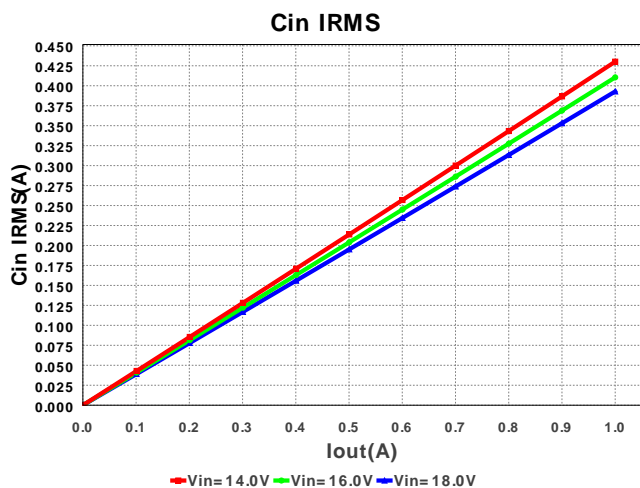
#	名称	制造商	零件编号	属性	Qty	Price	大小
1.	Cboot	AVX	08053C104KAT2A Series= X7R	Cap= 100.0 nF ESR= 280.0 mOhm VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	 0805 13mm2
2.	Cff	MuRata	GRM1555C1E5R1CA01D Series= C0G/NP0	Cap= 5.1 pF VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	 0402 8mm2
3.	Cin	MuRata	GRM32ER61E226KE15L Series= X5R	Cap= 22.0 µF ESR= 2.0 mOhm VDC= 25.0 V IRMS= 3.67 A	1	\$0.31	 1210 23mm2
4.	Cout	MuRata	GRM31CR60J476ME19L Series= X5R	Cap= 47.0 µF ESR= 3.0 mOhm VDC= 6.3 V IRMS= 0.0 A	1	\$0.20	 1206 19mm2
5.	Creg	MuRata	GRM155R61A105KE15D Series= X5R	Cap= 1.0 µF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	 0402 8mm2
6.	Css	MuRata	GRM155R71E822KA01D Series= X7R	Cap= 8.2 nF VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	 0402 8mm2
7.	L1	Bourns	SRN3015-2R2M	L= 2.2 µH DCR= 72.0 mOhm	1	\$0.13	 SRN3015 25mm2
8.	Ren	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 8mm2
9.	Rfbb	Vishay-Dale	CRCW040222K1FKED Series= CRCW..e3	Res= 22.1 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 8mm2
10.	Rfbb	Vishay-Dale	CRCW040275K0FKED Series= CRCW..e3	Res= 75.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 8mm2

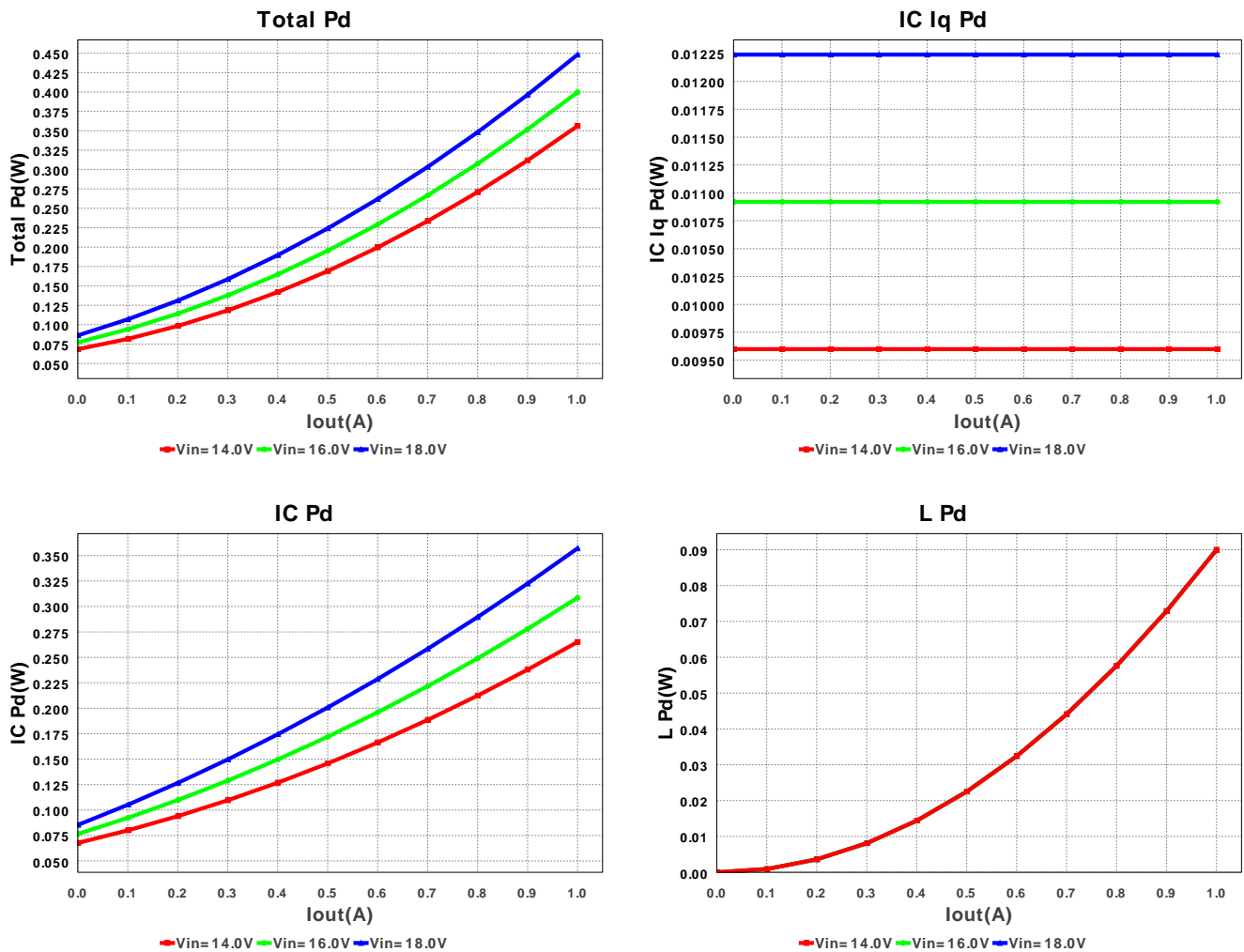
#	名称	制造商	零件编号	属性	Qty	Price	大小
11.	U1	Texas Instruments	TPS54327DDAR	Switcher	1	\$1.20	



R-PDSO-G8 57mm2







## 工作数值

#	名称	数值	类别	说明
1.	Cin IRMS	392.841 mA	Current	输入电容器均方根纹波电流
2.	Cout IRMS	516.265 mA	Current	输出电容器均方根纹波电流
3.	IC Ipk	1.894 A	Current	电路内的峰值开关电流
4.	Iin Avg	208.23 mA	Current	平均输入电流
5.	L Ipp	1.788 A	Current	峰值到峰值电感器纹波电流
6.	BOM 数量	11	General	Total Design BOM count
7.	大小	183.0 mm <sup>2</sup>	General	BOM组件的总所占面积
8.	频率	712.441 kHz	General	开关频率
9.	模式	CCM	General	传导模式
10.	Pout	3.3 W	General	总输出功率
11.	总 BOM	\$1.91	General	Total BOM Cost
12.	Vout OP	3.3 V	Op_Point	Operational Output Voltage
13.	占空比	19.069 %	Op_point	占空比
14.	效率	88.042 %	Op_point	稳态效率
15.	IC Tj	46.176 degC	Op_point	电路接点温度
16.	IC ThetaJA	45.3 degC/W	Op_point	电路接点到环境热敏电阻
17.	IOUT_OP	1.0 A	Op_point	Iout 操作点
18.	VIN_OP	18.0 V	Op_point	Vin操作点
19.	Vout p-p	10.677 mV	Op_point	峰值到峰值输出纹波电压
20.	Cin Pd	308.649 $\mu$ W	Power	输入电容器功率耗散
21.	Cout Pd	799.587 $\mu$ W	Power	输出电容器功率耗散
22.	电路静态电流功率耗散	12.24 mW	Power	电路静态电流功率耗散
23.	IC Pd	357.093 mW	Power	电路功率耗散
24.	L Pd	90.0 mW	Power	电感器功率耗散
25.	整体 Pd	448.203 mW	Power	总功率耗散

## 设计输入

#	名称	数值	说明
1.	输出电流	1.0 A	最大输出电流
2.	Iout1	1.0 Amps	Output Current #1

#	名称	数值	说明
3.	Vin 最大	18.0 V	最高输入电压
4.	Vin 最小	14.0 V	最低输入电压
5.	输出电压:	3.3 V	输出电压
6.	Vout1	3.3 Volt	Output Voltage #1
7.	base_pn	TPS54327	美国国家半导体的产品编号
8.	源	DC	输入源类别
9.	工作环境温度	30.0 degC	环境温度

## 设计协助

1. TPS54327 Product Folder : <http://www.ti.com/product/tps54327> : contains the data sheet and other resources.

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